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**Contributions from the Herbarium of the  
Geological Survey of Canada.**

**(By Permission of the Director.)**

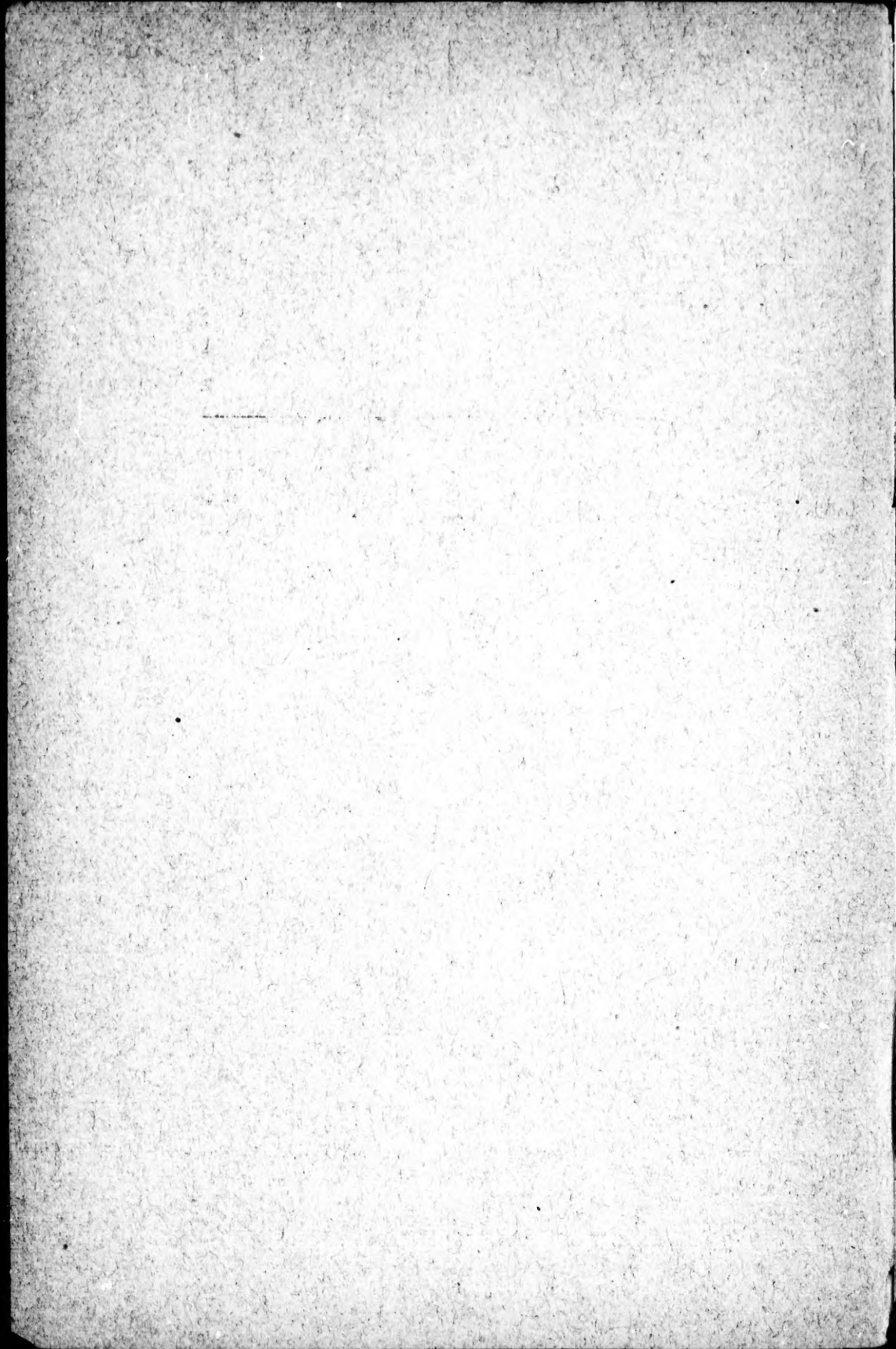
**By JAMES M. MACOÛN,  
*Curator of the Herbarium.***

**IV.**

*Reprinted from the Canadian Record of Science, January, 1895.*

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## Contributions to Canadian Botany.

By JAS. M. MACOUN.

### IV.

#### VIOLA BLANDA, Willd., var. AMÆNA (Le C.) B.S.P.

Seldom separated from the species by Canadian collectors. North Bay, Ont. (*Dr. and Mrs. Britton and Miss Millie Timmerman.*) Ottawa, Ont. (*James Fletcher.*) Wingham, Ont. (*J. A. Morton.*) The var. *palustriformis*, Gray, we consider but a larger form of the species under which we include our large stoloniferous specimens that are not certainly referable to var. *amæna*. They are from Edmonton, Ont. (*Jas. White.*) Wingham, Ont. (*J. A. Morton.*) Ottawa, Ont. (*J. M. Macoun.*)

#### VIOLA CANADENSIS, Linn.

Our most northern specimens of this species are from the Athabasca River. (*Miss E. Taylor.*)

#### VIOLA PALUSTRIS, Linn.

Between Lake Athabasca and Chesterfield Inlet in Lat. 61° 35, Long. 103° 30. (*Jas. W. Tyrrrell.*) Northern limit in Canada as shown by our specimens.

#### VIOLA SELKIRKII, Pursh.

Battle Harbor, Fox Cove, Labrador, 1892. (*Rev. A. Waghorne.*) Northern limit in Canada.

**POLYGALA VERTICILLATA, Linn.**

Sandy soil at Griswold, Man. (W. A. Burman.) Only station west of Ontario.<sup>1</sup>

**DIANTHUS ARMERIA, Linn.**

On rocks, Victoria Arm, Vancouver Island. Naturalized and spreading. In fruit July 21st, 1893. (John Macoun.) Not before recorded west of Ontario in Canada or Michigan in U.S.

**DIANTHUS BARBATUS, Linn.**

Escaped from cultivation and naturalized at Hot Springs, Kootanie Lake, B.C., 1890. (Jas. M. Macoun.)

**SAPONARIA VACCARIA, Linn.**

A weed in gardens at Kamloops, B.C. Roadsides, Nelson, Kootanie Lake, B.C.; Cameron Lake, Vancouver Island. (John Macoun.) Not before recorded west of the Columbia River.

**SILENE ARMERIA, Linn.**

Spontaneous in gardens at Rupert House, James Bay. (Jas. M. Macoun.) Our most northern record.

**SILENE CUCUBALUS, Wibel.**

Naturalized near Spray Falls, Banff, Rocky Mountains. (John Macoun.) Not before recorded west of Ontario.

**SILENE DOUGLASHI, Hook., var. MACOUNII, Robinson, Proc. Amer. Acad. xxviii, 144.**

*Lychnis elata*, Macoun, Cat. Can. Plants, Vol. I, p. 69.

*Silene multicaulis*, Macoun, Cat. Can. Plants, Vol. I, p. 494.

*S. Macounii*, Wats., Proc. Amer. Acad. xxvi, 124.

Our herbarium specimens of this variety are from Mt. Aylmer, Rocky Mts., alt. 6,800 ft.; Lake Louise, Rocky Mts.; Silver City, Rocky Mts.; Kicking Horse Lake, Rocky Mts., alt. 7,000 ft.; mountains north of Griffin Lake, B.C., alt. 6,500 ft. (John Macoun.) Mt. Queest, Shus-

<sup>1</sup> The Geographical limits given in these papers refer to Canada only.

wap Lake, B.C., alt. 6,000 ft.; Avalanche Mt., Selkirk Mts., B.C., alt. 7,000 ft. (*Jas. M. Macoun.*) Western Summit of North Kootanie Pass, Rocky Mts.; South of Tulameen River, B.C., alt. 6,000 ft.. (*Dr. G. M. Dawson.*) A part of the specimens referred to this variety are perhaps intermediate between it and the next.

*SILENE DOUGLASII*, Hook, var. *VISCIDA*, Robinson, Proc. Amer. Acad. xxvii, 145.

On slopes of high mountains at Kicking Horse Lake, Rocky Mts. (*John Macoun.*)

*SILENE DOUGLASII*, Hook., var. *MULTICAULIS*, Robinson.  
*S. multicaulis*, Macoun, Cat. Can. Plants, Vol. II., p. 309.  
Stump Lake, South of Kamloops, B.C. (*John Macoun.*)

*SILENE GALLICA*, Linn.

Common at Oak Bay, Goldstream and Victoria Arm, Vancouver Island. (*John Macoun.*) Introduced.

*SILENE NOCTIFLORA*, Linn.

A weed in gardens at Rupert's House, James Bay. (*Jas. M. Macoun.*) In waste places at Revelstoke, B.C., and Cedar Hill, Vancouver Island. (*John Macoun.*) Not before recorded from west of Winnipeg.

*LYCHNIS AFFINIS*, Vahl.

Between Lake Athabasca and Chesterfield Inlet. Lat. 63° 27', Long. 102°, 1893. (*Jas. W. Tyrrell.*) Cape Prince of Wales, Hudson Strait. (*Dr. R. Bell.*)

*LYCHNIS ELATA*, Wats.

Our only specimens of this species are from Avalanche Mt., Selkirk Mts., B.C., alt. 7,000 ft. (*Jas. M. Macoun.*)

*LYCHNIS TAYLORÆ*, Robinson, Proc. Amer. Acad. xxviii, 150.

Very slender 1 to 1½ feet high, puberulent, nearly smooth below, glandular above; stem erect, bearing 3 to 4 pairs of leaves and two or three long, slender, almost filiform 1 to 3 flowered branches; leaves thin, lance-linear, acute or

attenuate both ways, finely ciliate, and pubescent upon the single nerve beneath, otherwise glabrate, 2 to  $2\frac{1}{2}$  inches in length; flowers terminal or subterminal on the branches; calyx ovate, not much inflated, about 4 lines long, in anthesis but two lines in diameter with green nerves interlacing above; the teeth obtuse, with broad green membranous ciliate margins; petals  $1\frac{1}{2}$  times the length of the calyx; the blade obovate,  $1\frac{1}{2}$  lines long, considerably broader than the slender auricled claw, appendages lance-oblong.

Peel's River, Mackenzie River Delta, 1892. (*Miss E. Taylor.*)

LYCHNIS TRIFLORA, R. Br. var. DAWSONI, Robinson, Proc. Amer. Acad. xxviii, 149.

Calyx with principal nerves double or triple, joined by interlacing veinlets; the intermediate nerves beneath the sinuses inconspicuous or wanting; petals very narrow; the blade oblong, bifid, hardly to be distinguished from the narrow claw.

Gravel banks, Dease River, 100 miles north-east of Dease Lake. Lat.  $59^{\circ}$ , B.C., 1887. (*Dr. G. M. Dawson.*)

CLAYTONIA CHAMISSONIS, Esch.

Growing at high-water mark at Comox, Vancouver Island, 1893. (*John Macoun*, Herb. No. 29.)<sup>1</sup> These are our first authentic specimens of this species.

CLAYTONIA PARVIFOLIA, Moq.

Damp rocks, Sproat, Columbia River, B.C.; Griffin Lake, B.C.; Agassiz, B.C. (*John Macoun.*). Not before recorded between Selkirk Mts. and Vancouver Island.

OPUNTIA FRAGILIS, Haw.

This plant, of which specimens were collected by Mr. A. C. Lawson in 1884 on islands in the Lake of the Woods, was found again in 1894 by Prof. A. P. Coleman on Red Pine

<sup>1</sup> Whenever herbarium numbers are given, they are the numbers under which specimens have been distributed from the herbarium of the Geological Survey of Canada.

Island, Rainy Lake, just within Canadian territory. It covered about a square rod of the eastern end of the island and grew half-buried in lichens. The Indians with Prof. Coleman did not know of its occurrence elsewhere in that region.

*GALIUM PALUSTRE*, L. var. *MINUS*, Lge.

A comparison of specimens collected by the Rev. A. Waghorne at Long Point, Labrador, with Greenland plants shows that what was at first considered a form of *G. trijidum* is in fact *G. palustre*, var. *minus*. New to Canada.

*VERNONIA NOVEBORACENSIS*, Willd.

The plant from Essex Centre, Ont., referred to this species, Macoun, Cat. Can. Plants, Vol. I., p. 206, proves to be *V. altissima*, Nutt. Specimens collected by Prof. Macoun in thickets at Pelee Island, Lake Erie, 1892, are *V. noveboracensis*. We have seen no other Canadian specimens of this species.

*SERIOCARPUS RIGIDUS*, Lindl.

In open thickets Mount Finlayson and Cedar Hill, near Victoria, V. I. and Nanaimo, Vancouver Island, 1887. Oak Bay, near Victoria, V. I., Herb. No. 451. (*John Macoun*.) Collected in 1887 but not recorded.

*HELIOPSIS SCABRA*, Dunal.

In thickets, Kicking Horse River, Rocky Mts., alt. 4,000 ft., 1890. (*Jas. M. Macoun*.) Woods, Revelstoke, Columbia River, B.C. (*John Macoun*.) Probably introduced from Manitoba by the C. P. Ry. Not before recorded west of Manitoba.

*MADIA GLOMERATA*, Hook.

Dry ground at Revelstoke, Columbia River, B.C., 1890. (*John Macoun*.) Not before recorded west of Alberta.

*MADIA SATIVA*, Molina, var. *RACEMOSA*, Gray.

On dry banks, two miles from mouth of Kootanie River, B.C., 1890. (*John Macoun*.) Not before recorded from interior of British Columbia.



*MADIA SATIVA*, Mol., var. *CONGESTA*, Gray.

Specimens (Herb. No. 466) collected by Prof. Macoun at Beacon Hill, Victoria, Vancouver Island, Aug. 7th, 1893, and referred by him to this variety have been submitted to Dr. Robinson, who says, "a form showing characters of var. *congesta* (as to inflorescence) and var. *racemosa* (as to leaves and pubescence)."

*HEMIZONELLA DURANDI*, Gray.

Hillsides at Sproat, Columbia River, B.C., 1890. (*John Macoun.*) New to Canada.

*COTULA AUSTRALIS*, Hook., f.

Ballast heaps at Nanaimo, Vancouver Island, 1893. (*John Macoun*, Herb. No. 476.) New to Canada.

*ARTEMISIA RICHARDSONIANA*, Bess.

Mount Rapho, Lat.  $56^{\circ} 13'$ , Long.  $131^{\circ} 36'$ , alt. 3,800 ft., July, 1894. (*Otto Klotz* and *H. W. E. Canavan*, Herb. No. 4,191.)

*ARNICA LATIFOLIA*, Bong. var. *VISCIDULA*, Gray.

Woods at Roger's Pass, Selkirk Mts., B.C., alt. 4,500 ft., 1890. (*John Macoun.*) New to Canada.

*CENTAUREA PANICULATA*, L.

Dry waysides, Victoria, Vancouver Island, 1893. (*John Macoun*, Herb. No. 552.) New to Canada.

*CASSIOPE STELLERIANA*, DC.

Mt. Rapho, Lat.  $56^{\circ} 13'$ , Long.  $131^{\circ} 36'$ . Alt. 3,800 ft. In flower July 10th, 1894. (*Otto Klotz* and *H. W. E. Canavan*, Herb. No. 4,195.) First Canadian record.

*PRIMULA CUNEIFOLIA*, Ledeb.

Mt. Rapho, Lat.  $56^{\circ} 13'$ , Long.  $131^{\circ} 36'$ . Alt. 3,800 ft. In flower July 10th, 1894. (*Otto Klotz* and *H. W. E. Canavan*, Herb. 4,192.) New to Canada.

*COLLINSIA VERNA*, Nutt.

In woods near Plover Mills, Ont. In great abundance in

one locality but not found elsewhere. Collected by R. Elliott, May 22nd, 1894. New to Canada.

*PEDICULARIS PEDICELLATA*, Bunge.

Mt. Head, Lat.  $56^{\circ} 05'$ , Long.  $131^{\circ} 08'$ . Alt. 4,200 ft. (*Otto Klotz and H. W. E. Canavan*, Herb. No. 4,196.) Only authentic Canadian station.

*UTRICULARIA RESUPINATA*, B. D. Green.

Abundant on sand and mud both in shallow and gently flowing water. Phipps Lake, Long Reach, Kings Co., N.B., July 13th-20th, 1886. (*C. H. Livingstone*). Only Canadian station, though a plant believed to be this species was found by Prof. Macoun in Victoria Co., Ont., in 1868.

*AMARANTUS*, Linn.

Our herbarium specimens of this genus have been examined by Messrs. Uline and Bray who have either confirmed our determinations or made necessary corrections that are included in the following notes.

*A. RETROFLEXUS*, LINN.

Specimens collected by Prof. Macoun at Agassiz, B.C., and referred here are intermediate between *A. Powellii* and *A. retroflexus*.

*A. HYBRIDUS*, Linn.

References under *A. paniculatus* and *A. hypochondriacus*, Macoun, Cat. Can. Plants, Vol. I, p. 396, are, so far as our herbarium specimens are concerned, *A. hybridus*.

*A. PANICULATUS*, Linn.

Waste places, Sicamous, B.C., 1889. (*John Macoun*.) Our only specimens of this species.

*A. GRÆCIZANS*, Linn.

*A. albus*, L.; Macoun, Cat. Can. Plants, Vol. I, p. 397.

This species is well distributed throughout British North America. Specimens collected by the borders of saline ponds near Kamloops, B.C., by Jas. M. Macoun are near *A. carneus*, Greene.

## A. BLITOIDES, Wat.

London, Ont. (*Millman.*) Port Colborne, Ont. (*John Macoun.*) Point Edward, St. Clair River, Ont. (*Jas. M. Macoun.*)

## POLYGONUM.

All our herbarium specimens of this genus have been examined by Prof. John K. Small, who has made several important changes in our determinations. He had not our herbarium sheets at the time his revision of the *Polygonaceae* was published so that the distribution of the Canadian species of *Polygonum* as given below will greatly extend the range of many North American species. I follow Prof. Small's arrangement of the species throughout.

(1.) *P. VIVIPARUM*, Linn.

Throughout Canada. Our most northern specimens are from Lat. 64° 26', Long. 100° 45', 1893. (*Jas. W. Tyrrell.*) and Great Bear Lake River. Lat. 65°, 1892. (*Miss E. Taylor.*)

(2.) *P. PERSICARIA*, Linn.

From Prince Edward Island to Vancouver Island. Abundant throughout the settled parts of Canada.

(3.) *P. CAREYI*, Olney.

Wet sandy banks, Moon River, Muskoka, Ont., 1878. (*Burgess.*) The only Canadian station.

(4.) *P. hydropiperoides*, Michx.

We have this species from but one locality, Belleville, Ont. Many of the references given by Prof. Macoun (*Cat. Can. Plants*, Vol. I, p. 411), probably refer to other species. This plant is certainly not of as general distribution in Canada as is supposed, or our herbarium would contain specimens from more stations than one.

Of this species and var. *strigosum* Prof. Small writes, "*P. hydropiperoides*, as well as the var. *strigosum*, has an almost invariable character which it seems, has never been recorded. The stem or branches always produce, at the dis-

tance of three-fourths of an inch or less above the angle of branching, a node with a leaf and ocrea, thus making an internode several times shorter than normal length."

Var. STRIGOSUM, Small.

In ditches at Gatineau Point near Hull, Que. (*John Macoun*.) In water near St. Patrick's Bridge, Ottawa, Ont. (*Jas. M. Macoun*, Herb. No. 1503.)

(5.) *P. HYDROPIPER*, L.

From New Brunswick to Pacific Coast.

(6.) *P. PUNCTATUM*, Ell.

*P. acre*, Macoun, Cat. Can. Plants, Vol. I., p. 411.

Not rare in Eastern Canada. Agassiz, B.C., and Kamloops, B.C. (*John Macoun*.) Not before recorded west of Ontario.

(7.) *P. PENNSYLVANICUM*, L.

Common from Nova Scotia to Western Ontario.

(8.) *P. LAPATHIFOLIUM*, L.

Common from the Atlantic to the Pacific. Prof. Small thinks this species has been introduced wherever found. While this may be so in most cases, we have specimens from remote regions that are without doubt indigenous.

Var. INCANUM, Koch.

From Ontario to the Pacific.

(9.) *P. AMPHIBIUM*, L.

Tadousac, Que. (*Northrop*.) Wingham, Ont. (*J. A. Morton*.) Hastings Co., Ont.; Long Portage, Nipigon River, Ont.; Tail Creek, N.W.T.; near Victoria, Vancouver Island. (*John Macoun*.) Near Pincher Creek, Alberta. (*Dr. G. M. Dawson*.)

(10.) *P. EMERSUM*, (Michx.) Britt.

Most of the references under *P. Muhlenbergii*, Macoun, Cat. Can. Plants, Vol. I., p. 410, and Vol. II., p. 353, go here. Our herbarium specimens are from Wingham, Ont.

(*J. A. Morton.*) Leamy's Lake, Hull, Que.; Tail Creek, N.W.T. (*John Macoun.*) Indian Head, Assa. (*W. Spreadborough.*) Short Creek, Souris River, Man.; Belly River, Alberta. (*Dr. G. M. Dawson.*) "Arctic North America," no locality. (*Dr. Richardson.*)

(11.) *P. HARTWRIGHTII*, Gray,

Salt Lake, Anticosti, Que.; Elziver, Hastings Co., Ont.; Vermillion Lakes, near Banff, Rocky Mts. (Herb. No. 1,481.); Revelstoke, B.C.; Kamloops, B.C. (*John Macoun.*) Near York Factory, Hudson Bay. (*Dr. R. Bell.*) London, Ont. (*Burgess.*) Muskeg Island, Lake Winnipeg. (*Jas. M. Macoun.*)

(12.) *P. Orientale*, L.

Ottawa, Ont. (*Dr. A. R. C. Selwyn.*) London, Ont. (*Burgess.*)

(13.) *P. ALPINUM*, All.

Peel River, Mackenzie River Delta, 1892, (*Miss E. Taylor.*) The references under *P. polymorphum*, Macoun, Cat. Can. Plants, Vol. I., p. 412, probably all go with this species or its var. *lapathifolium*.

(14.) *P. AVICULARE*, L.

From Ontario to Vancouver Island.

VAR. *BOREALIS*, Lange.

Specimens collected on the East Main River, Hudson Bay, by A. H. D. Ross, in 1892, when compared with specimens from Greenland seem certainly referable here.

(15.) *P. LITTORALE*, Link.

*P. erectum*, Macoun, Cat. Can. Plants, Vol. 1., p. 407 in part.

Thunder Bay, Lake Superior. (*N. L. Britton.*) Castle Mountain, Rocky Mts.; Banff, Rocky Mts. Herb. No. 1,487; near Devil's Lake, Rocky Mts., Herb. No. 1,486. (*John Macoun.*) Walsh, Assa. (*J. M. Macoun.*)

(16) *P. RAYI*, Bab.

*P. maritimum*, Macoun, Cat. Can. Plants, Vol. I., p. 408.

Turner's Head, Labrador. (*Rev. A. Waghorne.*) Brackley Point, P.E.I.; Jupiter River, Anticosti, Que.; Qualicum and Point Holmes, Comox, Vancouver Island. Herb. No. 1505. (*John Macoun.*) Bass River, N.B. (*Fowler.*) We do not believe, that this plant, "wherever found," in Canada, has been introduced. Prof. Small found among our specimens no representatives of *P. maritimum*, and as our specimens of *P. Rayi* are from widely separated and remote localities on the Atlantic and Pacific coasts, it seems probable that we have but one species in Canada, and that it is, at least in part, indigenous.

(17.) *P. PARONYCHIA*, J. & S.

Beacon Hill, Vancouver Island. (*John Macoun. C. F. Newcombe.*)

(18.) *P. ERECTUM*, L.

Our only specimens of this species are from Winnipeg, Man.; Banff, Rocky Mts. Herb. No. 1,485. (*John Macoun.*)

Other specimens referred here by Prof. Macoun, Cat. Can. Plants, Vol. I., p. 407, are now included under other species.

(19.) *P. RAMOSISSIMUM*, Michx.

Petitecodiac, N.B. (*J. Britain.*) Rat Creek, Man.; Hand Hills, N.W.T.; South of Battleford, N.W.T. (*John Macoun.*)

(20.) *P. DOUGLASII*, Greene.

*P. tenue*, Macoun, Cat. Can. Plants, Vol. I, p. 408.

Not rare from Ontario to British Columbia. We have apparently no *P. tenue* in Canada.

Prof. Small says of this species, "*P. Douglasii* can be distinguished from its relative *P. tenue* at a glance, and is beautifully distinct, as Prof. Greene has pointed out, by its one-ribbed leaf in place of the three-ribbed of *P. tenue*, and the much longer, narrower and pedicelled, drooping fruit, instead of the short, thick, sessile, erect fruit of that plant."

- (21.) *P. AUSTINÆ*, Greene.

South Kootanie Pass, Rocky Mts., 1883. (*Dr. G. M. Dawson.*) Near the glacier at the head of Lake Louise, Rocky Mts. Alt. 7,500 ft. (*John Macoun.*) Dr. Dawson's specimens were collected a year before Mrs. Austin's, and were named *P. tenue*, Michx., var. *latifolium*, Eng., by Prof. Macoun.

- (22.) *P. SPERGULARIEFORME*, Meisn.

*P. coarctatum*, Dougl.

From the Columbia River at Sproat, B.C., to Vancouver Island.

- (23.) *P. MINIMUM*, Wats.

South Kootanie Pass, Rocky Mts. (*Dr. G. M. Dawson.*) Roger's Pass, Selkirk Mts., B.C.; Griffin's Lake, B.C. (*John Macoun.*)

- (24.) *P. INTERMEDIUM*, Nutt.

Summit of Mt. Mark, Vancouver Island. (*John Macoun.*)

- (25.) *P. IMBRICATUM*, Nutt.

Hand Hills and Cypress Hills, Alberta. (*John Macoun.*)

- (26.) *P. CONVOLVULUS*, L.

Common in fields and waste places from the Atlantic to the Pacific.

- (27.) *P. SCANDENS*, L.

*P. dumetorum*, L., var. *scandens*, Gray.

From Nova Scotia to the Cypress Hills, Alberta.

- (28.) *P. CILINODE*, Michx.

In pine woods and thickets from Nova Scotia to the Peace River, Athabasca.

- (29.) *P. SAGITTATUM*, L.

From Prince Edward Island to the Saskatchewan.

- (30.) *P. ARIFOLIUM*.

From Nova Scotia to Ontario.

(31.) *P. VIRGINIANUM*, Linn.

All our specimens of this species were collected in Ontario. Reported from Nova Scotia and Quebec.

*POLYGONELLA ARTICULATA*, Meisn.

*Polygonum articulatum*, Willd ; Macoun, Cat. Can. Plants Vol. I., p. 409.

Sand dunes, Point Aux Pins, Lake Superior, 1869. (*John Macoun*.) Specimens collected by Dr. Richardson, and labelled "Arctic North America," are probably from the same locality.



